

DETAIL OF ITEM 01 TO 24

TECHNICAL REQUIREMENTS/TR

1. WELDED AUSTENITIC STAINLESS STEEL U-BEND TUBE SHALL CONFORM TO SPECIFICATION SA 688 TP 304:ASME 2010 & HE-54007 WITH CARBON CONTENT LIMITED TO 0.05% MAX.
2. HEAT TREATMENT OF TUBES: BRIGHT ANNEALING AFTER CLEANING.
3. EDDY CURRENT EXAMINATION TO BE CARRIED OUT IN EACH TUBE IN ADDITION TO HYDROSTATIC TEST, AS PER THE SUPPLEMENTARY REQUIREMENT S1 OF SA-688.
4. AFTER BENDING, "U" BEND PORTION OF EACH TUBE TO BE SOLUTION ANNEALED.
5. BEND PORTION OF EACH TUBE (OF ROW Nos 01 TO 02) TO BE EXAMINED BY LIQUID PENETRATION METHOD, AS PER APPENDIX-8 OF ASME SEC.VIII DIV.1:2010.
6. BEND PORTION OF SMALLEST RADIUS TUBES SHALL BE SUBJECTED TO INTERGRANULAR CORROSION TEST AS PER ASTM-E-262 PRACTICE 'E' INCLUDING OD SURFACE OF SMALLEST BEND.
7. EACH TUBE (AFTER EDDY CURRENT EXAMINATION & BENDING), SHALL BE HYDROSTATICALLY TESTED AT A PRESSURE OF 398.0 Kg/sq.cm.g. USING DM WATER. CHLORIDE CONTENT IN DM WATER SHALL NOT EXCEED 10 PPM MAX.
8. HARDNESS OF THE FINISHED TUBE SHALL BE LIMITED TO 85 HRB MAX.
9. TUBE END FACE SHOULD BE SQUARE WITH TUBE AXIS.
10. ALL TECHNICAL AND TESTING REQUIREMENTS SHALL BE AS PER MATERIAL SPECIFICATION SA 688 AND HE 54007.
11. APPLICATION -HIGH PRESSURE FEED WATER HEATER.
12. INSPECTION AGENCY: ANY APPROVED INSPECTION AGENCY AS PER I.B.R.
13. SIX (6) COPIES OF MILL TEST CERTIFICATES TO BE FURNISHED FOR HEAT TREATMENT, EDDY CURRENT EXAMINATION, HYDROSTATIC TEST, CHEMICAL ANALYSIS, IGC TEST, MECHANICAL PROPERTIES etc. ALONG WITH IBR FORM III B.

14. DESIGN DATA

DESIGN PRESSURE	265.0 Kg/sq.cm g
DESIGN TEMPERATURE	225°C
HYDROSTATIC TEST PRESSURE	398.0 Kg/sq.cm g

ESTIMATED WEIGHTS & DEVELOPED LENGTHS.

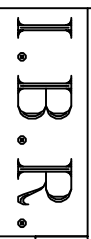
ITEM No.	TOTAL DEV. LENGTH (M)	ESTIMATED WEIGHT(Kg)	No. OF TUBES	TUBE THK
VAR.00	VAR.00	VAR.00	VAR.00	
01 TO 02	1247.3	1066.5	83	13 BWG (MIN)
03 TO 24	11377.4	8823.4	729	14 BWG (MIN)
TOTAL	12624.7	9889.9	812	

VAR.00 INDICATES QTY. OF TUBES REQUIRED FOR ONE HEATER.

ISSUED BY _____ CHECKED BY _____ APPROVED BY _____

INVENTORY NO.	SIGN AND DATE	REF. DRG. NO.
		3-17505-40539

ITEM NO.	DESCRIPTION	UNIT	QTY.	WEIGHT (Kg)	REMARKS
24	TUBE 15.875 ODX14 BWG(MIN)	B.O.	12.47		
23	TUBE 15.875 ODX14 BWG(MIN)	B.O.	12.43		
22	TUBE 15.875 ODX14 BWG(MIN)	B.O.	12.38		
21	TUBE 15.875 ODX14 BWG(MIN)	B.O.	12.34		
20	TUBE 15.875 ODX14 BWG(MIN)	B.O.	12.30		
19	TUBE 15.875 ODX14 BWG(MIN)	B.O.	12.25		
18	TUBE 15.875 ODX14 BWG(MIN)	B.O.	12.21		
17	TUBE 15.875 ODX14 BWG(MIN)	B.O.	12.17		
16	TUBE 15.875 ODX14 BWG(MIN)	B.O.	12.13		
15	TUBE 15.875 ODX14 BWG(MIN)	B.O.	12.08		
14	TUBE 15.875 ODX14 BWG(MIN)	B.O.	12.04		
13	TUBE 15.875 ODX14 BWG(MIN)	B.O.	12.00		
12	TUBE 15.875 ODX14 BWG(MIN)	B.O.	11.95		
11	TUBE 15.875 ODX14 BWG(MIN)	B.O.	11.91		
10	TUBE 15.875 ODX14 BWG(MIN)	B.O.	11.87		
09	TUBE 15.875 ODX14 BWG(MIN)	B.O.	11.82		
08	TUBE 15.875 ODX14 BWG(MIN)	B.O.	11.78		
07	TUBE 15.875 ODX14 BWG(MIN)	B.O.	11.74		
06	TUBE 15.875 ODX14 BWG(MIN)	B.O.	11.70		
05	TUBE 15.875 ODX14 BWG(MIN)	B.O.	11.65		
04	TUBE 15.875 ODX14 BWG(MIN)	B.O.	12.92		
03	TUBE 15.875 ODX14 BWG(MIN)	B.O.	12.87		
02	TUBE 15.875 ODX13 BWG(MIN)	B.O.	12.83		
01	TUBE 15.875 ODX13 BWG(MIN)	B.O.	12.83		



ADDITIONAL INFORMATION
DRG. LIST No.4-17500-40093
STATUS OF DRAWING
W.O.No.13020/24-C-14139



H.P. HEATER No.5 (REPLACEMENT)
2x210 MW ROPAR T.P.S., Unit-1&2
GSSSTP

REV.	DATE	ALTERED	APPROVED
13		GAUGE	
14		THICK	
		AVG.WT./m	
		0.855 Kg	
		0.765 Kg	

3-17505-40855 00